We are requesting a return and evaluation for a batch of DRV8231DSGR motor driver ICs purchased on **March 13, 2025**.

- **Lot Code (packaging):** 4175249CDA

- **Device Marking:**

  31
  458
  A3D2

- **Quantity:** 642

- **Digi-Key Order Number:** 91523235

Issue   **Description:**

This batch of ICs consistently shows **no output at OUT1 and OUT2**, despite all supply and logic signals being applied correctly. We verified the inputs and outputs using an oscilloscope.
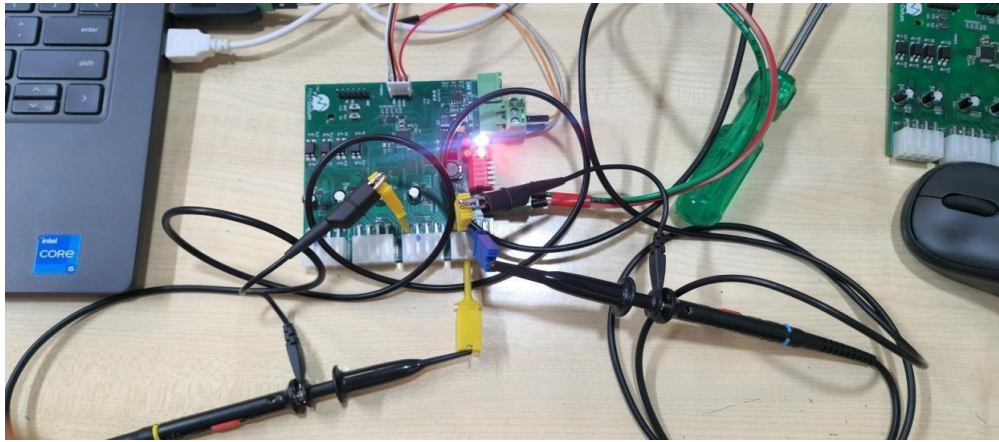
The same test circuit, PCB, and test bench setup work correctly with a previous batch of DRV8231DSGR devices purchased on **November 7, 2024**, marked **31-428-A62J**. Swapping only the ICs confirms the issue is isolated to this particular lot.

IC Marking:
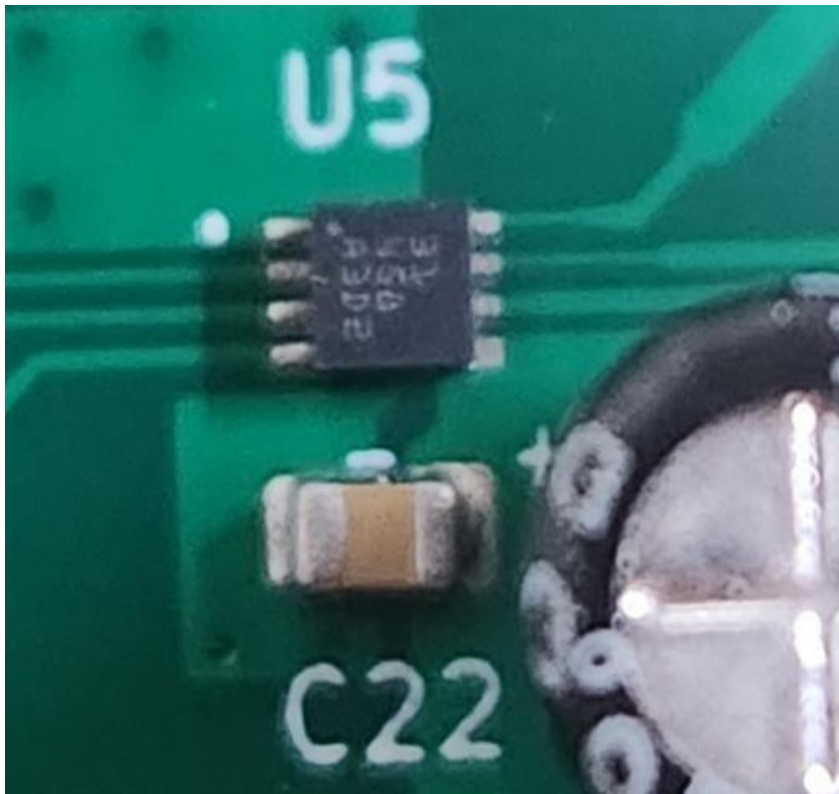
Testing:

To validate the functionality of the DRV8231DSGR IC, the following oscilloscope test configuration was used:

- **Channel Configuration:**

    - **CH1 (Forward Test):** Probe connected to the signal output (OUT1/OUT2), with ground reference connected to system GND

    - **CH1 (Reverse Test):** Same configuration applied, with reversed input conditions to test reverse operation
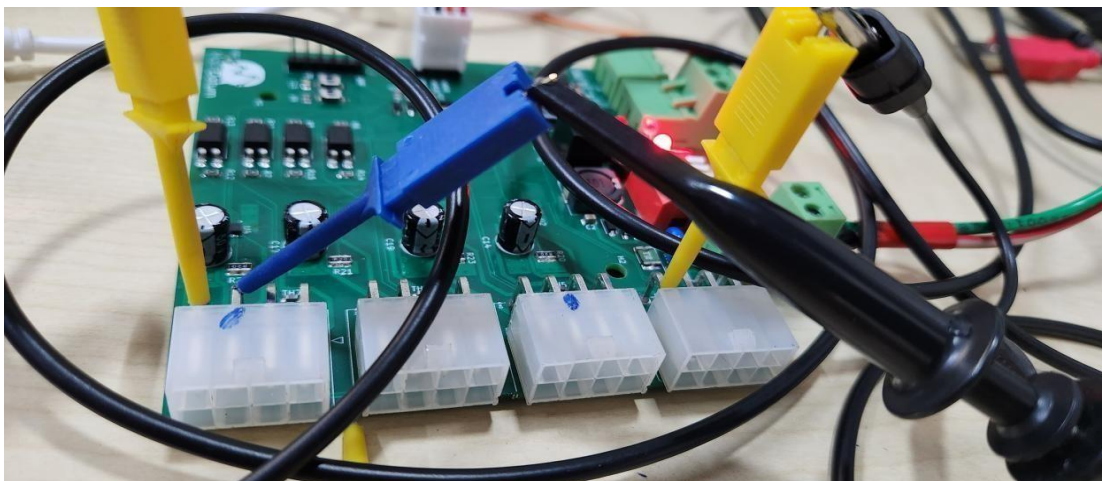
Test Comparison Between Current and Previous IC Batches

The oscilloscope test setup included **four channels** for simultaneous observation and comparison.

- The **marked channel outputs** (highlighted in blue on the white connector) correspond to the **current batch** of DRV8231DSGR ICs, marked **31-458-A3D2**.

- The **unmarked channel outputs** correspond to the **previous batch**, marked **31-428-A62J**.

Test Conditions (Common for Both Batches):

- Input Supply: 24 VDC

- Input Signal: 40 kHz PWM at 50% duty cycle

- Identical test circuit, PCB, and firmware used for both batches

Observations:

- The **previous batch (31-428-A62J)** produced the expected PWM output with a voltage swing up to 24V.

- The **current batch (31-458-A3D2)** failed to produce any output under the same conditions.

This confirms that the issue is specific to the current lot and not related to the test setup or methodology.

Marking on IC: **31-458-A3D2.**

Technical Issue Description: DRV8231DSGR – No Output Observed (Marking: 31458A3D2)
We are encountering a functional issue with a batch of **DRV8231DSGR** motor driver ICs (marking: **31458A3D2**, lot code: **4175249CDA**), purchased on **March 13, 2025**.
Test Setup Details:
- **PWM Input:** 40 kHz frequency, 50% duty cycle

- **Supply Voltage:** 24 VDC
- **Forward Operation:** IN1 = High, IN2 = Low
- **Reverse Operation:** IN1 = Low, IN2 = High
- **Expected output:** The IC should replicate the input PWM signal at the OUT1/OUT2 pins accordingly, based on the input conditions.

Issue   **Observed:**

Despite correct supply and input logic signals, the ICs marked **31458A3D2** do not provide any output at **OUT1** or **OUT2** under the described test conditions.

Testing vedio:

[Firmware_Testing_Result](#) (Video_link)

[31458A3D2_testing](#) (Video_link)

Marking on ICs: **31428A62J**

Forward operation

Forward Operation – Working (Marking: 31428A62J)
- **PWM Input:** 20 kHz, 50% duty cycle
- **IN1:** High (PWM applied)
- **IN2:** Low
- **Supply Voltage:** 24 VDC
- **Reference Voltage:** 3.3VDC
- **Expected Result:** PWM output at OUT1/OUT2
- **Observed Result:** Output is as expected – PWM signal is present at OUT1/OUT2

Reverse Operation

Reverse Operation – Working (Marking: 31428A62J)

- **PWM Input:** 40 kHz, 50% duty cycle

- **IN1:** Low

- **IN2:** High (PWM applied)

- **Supply Voltage:** 24 VDC

- **Expected Result:** PWM output at OUT1/OUT2 (in reverse polarity)

- **Observed Result:** Output is as expected – PWM signal is present at OUT1/OUT2

Testing Vedio:

Firmware_Testing_Results (Video_link)

31428A62J_testing (Video_link)

Please evaluate this batch as potentially defective. We would appreciate a replacement or refund.